NON-PUBLIC?: N
ACCESSION #: 9303260065
LICENSEE EVENT REPORT (LER)

FACILITY NAME: PRAIRIE ISLAND NUCLEAR GENERATING PLANT PAGE: 1 OF 3
UNIT 1

DOCKET NUMBER: 05000282

TITLE: Unit 1 Reactor Trip Due to Inadvertent Relay Operation
Which Caused Loss of No. 12 Reactor Coolant Pump
EVENT DATE: 02/18/93 LER #: 93-005-00 REPORT DATE: 03/22/93

OTHER FACILITIES INVOLVED: DOCKET NO: 05000

OPERATING MODE: N POWER LEVEL: 100

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR SECTION:
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:
NAME: Arne Hunstad, Staff Engineer TELEPHONE: (612) 388-1121

COMPONENT FAILURE DESCRIPTION:
CAUSE: SYSTEM: COMPONENT: MANUFACTURER:
REPORTABLE NPRDS:

SUPPLEMENTAL REPORT EXPECTED: No

ABSTRACT:

On February 18, 1993, Unit 1 was at 100% power. Cleaning of floors in the Turbine Building was in progress. A plant services attendant was burnishing the floor in the area of Bus 12. Bus 12 supplies 4KV power to No. 12 RCP and No. 12 Feedwater Pump. While moving the machine along the end of Bus 12, a caster wheel of the machine caught in a joint in the floor. This forced the burnishing machine toward the bus and into the lower door hinge of Breaker 12-1, the offsite power supply to Bus 12. When the machine hit the door hinge of Breaker 12-1, the attendant heard the breaker operate. The attendant immediately called the control room to report the event. At 0814 the reactor had tripped; the first out annunciator received was "One Loop Lo Flow or RCP Bkr Open."

The reactor protection system responded as designed to the loss of Bus 12

and the unit was stabilized in the hot shutdown condition in accordance with plant procedures following the reactor trip.

Cause of the event was determined and restart accomplished in accordance with plant procedures. The unit was returned to service at 2333 hours.

END OF ABSTRACT

EVENT DESCRIPTION

On February 18, 1993, Unit 1 was at 100% power. Cleaning of floors in the Turbine Building was in progress. A plant services attendant was burnishing the floor in the area of Bus 12 (BU). Bus 12 supplies 4KV power to No. 12 Reactor Coolant Pump (P) and No. 12 Feedwater Pump (P). While moving the machine along the end of Bus 12, a caster wheel of the machine caught in a joint in the floor. This forced the burnishing machine toward the bus and into the lower door hinge of Breaker 12-1 (BKR), the offsite power supply to Bus 12. When the machine hit the door hinge of Breaker 12-1, the attendant heard the breaker operate. The attendant immediately called the control room to report the event. At 0814 the reactor had tripped; the first out annunciator received was "One Loop Lo Flow or RCP Bkr Open."

When the burnishing machine bumped into the Breaker 12-1 cubicle door hinge, the door was jarred hard enough to cause the indicating contact switch in the 62/B12 relay (86) to actuate. This energized the 86 lockout relay, which opened the source breakers to Bus 12, creating an undervoltage and underfrequency condition on Bus 12. The loss of voltage caused decreasing flow in 12 Reactor Coolant System Loop. Unit 1 Reactor (RCT) tripped when 2 out of 3 Reactor Coolant System Flow channels reached their setpoints. The turbine trip that followed also tripped No. 11 Feedwater Pump as designed. The breakers for No. 12 Reactor Coolant Pump and No. 12 Feedwater Pump opened approximately 5 seconds after the Bus 12 undervoltage, as designed.

The reactor protection system responded as designed to the loss of Bus 12 and the unit was stabilized in the hot shutdown condition in accordance with plant procedures following the reactor trip.

Cause of the event was determined and restart accomplished in accordance with plant procedures. The unit was returned to service at 2333 hours.

CAUSE OF THE EVENT

Cause of the event was accidental bumping of a breaker cubicle by a floor burnishing machine.

ANALYSIS OF THE EVENT

This event is reportable pursuant to 10CFR50.73(a)(2)(iv) since it involved an unplanned actuation of the reactor protection system. The event had no effect on public health and safety. The reactor protection system responded as designed to the loss of Bus 12 and the unit was stabilized in the hot shutdown condition in accordance with plant procedures following the reactor trip.

CORRECTIVE ACTION

When the burnishing machine hit the door hinge of Breaker 12-1, the attendant heard a noise coming from the bus that was recognized as abnormal. The attendant immediately called the control room to report the event.

Operators stabilized the unit in the hot shutdown condition following the reactor trip in accordance with plant procedures.

The event was discussed with all plant services attendants.

Several corrective actions are being considered to prevent recurrence of this event. Among them are:

- Further use of physical barriers and exclusion areas around electrical equipment.

- Evaluation of the practice of using power buffers and burnishers in proximity of electrical equipment.

- Evaluation of the need for training to include working around sensitive equipment.

FAILED COMPONENT IDENTIFICATION

None .

PREVIOUS SIMILAR EVENTS

Accidental breaker operations have previously been reported as Unit 1 LER's 85-011 and 85-014. However, these events resulted from inadvertent

actuation of 480 V breaker manual trip devices rather than relay actuation caused by an impact to a 4160 V breaker cubicle door.

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